

# Causes and Cures of Radiation

## Correspondents Make Complaint



HERE is little more annoying than a howling valve. Static and fading, perhaps, are worse, but they are uncontrollable, but for the howling valve, it is nothing more or less than carelessness and wantonness. The city areas are particularly troubled with this annoyance, and the time is ripe that some definite move be made to overcome it. According to the regulations of the Post and Telegraph Department, a receiver that causes interference is illegal, but still set owners with sets capable of radiating disregard this fact and carelessly handle their receiver.

Of the receivers we are interested in, there are two main types: the neutrodyne and the set using reaction. The former, if correctly neutralised, when built, will not cause interference, but it is less sensitive than the reaction-using set. It is mainly with these latter that the following remarks apply, but owners of neutrodyne who find that their set whistles, should re-neutralise, as has been described through these columns.

### When Using Reaction.

SETS fitted with reaction, such, for example, as the "Browning-Drake," cause no trouble when used on powerful stations under good conditions. There is then no need to use regeneration and the set behaves as an ordinary balanced neutrodyne. It is very rare that users of such sets are content to remain tied to the few powerful stations that can be received without reaction. If the set operator is to use reaction then the onus is

upon him unless he wishes to make himself a pest to radio listeners to learn how to properly control that reaction.

Select a time when there are few stations on the air, preferably when there are none, and make all connections as for receiving. Advance the rheostat to the usual position. Now steadily turn the reaction dial, listening carefully, and noting the readings passed through. At a certain point a slight "pop" will be heard, and then a breathing or rustling. The set is now oscillating, but these oscillations are not being received by any other receiver. This is the oscillation point for that particular dial reading. Tune now to another dial reading, preferably on the other side of the dial, and repeat, noting the oscillation point. Make a note of these points, and consider them when tuning in to stations.

Annoyance is caused through the oscillations of the set heterodyning with the carrier-wave of a transmitting station. The set and the carrier-wave are almost, but not quite, at the same frequency, and the difference between the two gives rise to a beat note or howl, which will be received sometimes for miles. Anyone then who has tuned in to this station will receive the annoying howl, and in all probability pass some very fine compliments, which we hesitate to repeat, upon the dial twiddler.

When the set operator wishes to tune in a distant station, he should set the reaction dial as near as possible to the point of oscillation, and then gradually increase or decrease his dial readings until the signals are heard at maximum strength. Ad-

vancing the reaction control further than this point will cause a howl. It may bring the signal strength up, but will be accompanied by such a noise that it will be impossible to enjoy the reception. Such things are done to get a call-sign, but it must be remembered that that station is beyond the power of the receiver, and in getting its call-sign the programmes of all neighbouring sets tuned into that station are ruined.

### Sets that will Oscillate.

IT is sometimes argued that one and two-valve sets using reaction are objectionable because of this. This cannot be said to be the case. For every receiver using reaction there is a station on the border line, whether this is a distant American on the border line for a 5-valve set, or whether it is an Australian station for a one-valver. Operators who do not understand their sets will make them howl irrespective of their size. This is nothing short of radio criminology. An operator who cannot use reaction properly should leave it alone or use a neutrodyne; failing that, the perfectly safe catwhisker.

Below we publish some letters received recently from our correspondents regarding this nuisance. The first correspondent, "Listen and Let Listen," complains about the "Combination Receiver," but his remarks cannot apply to this set more than to any set using reaction for the reasons outlined previously.

It is generally admitted that many people are prejudiced against radio receiving sets, more especially of the multi-valve type, on account of the interference to good music by such things as static and howling valves, to mention only two, and we all know how these demons are more in evidence on that special evening when we invite our best friends or neighbours along for an evening's 'entertainment.' Old man 'Static,' I suppose, will always be with us. The howling valve nuisance can be reduced vastly to the benefit of all concerned by (1) educating the possessors of wireless sets to use their sets without causing annoyance to others; (2) discouraging the construction by amateurs of sets that are liable to cause such interference.

"All of which brings me to the subject of an article in the 'Record' published on the 12th instant, under the heading of the 'Combination' Receiver, wherein it is mentioned, inter alia, 'When operating this set care must be taken not to allow it to oscillate, as it is capable of radiating and disturbing neighbours' reception for miles around unless carefully handled.' In my humble opinion it is an ill-advised action on an expert to place in the hands of amateur constructors instructions on the construction of an instrument that is capable of annoying neighbours for miles around. It would be quite all right if all heeded the advice given to handle the set carefully, but painful experience has taught many of us that there are some people who consider nobody but themselves, others

through ignorance are quite innocent of the fact that their neighbours 'for miles around' are getting the full benefit of their ignorance. I have lately had occasion to appeal to the radio inspector on this matter, being one of the victims within the radius of the aforementioned 'for miles around.'

"In short, many prospective purchasers of expensive multivalve sets are 'scared away' from radio, by hearing the 'howling valve experts' spoiling the reception of good concerts by friends who have paid high prices for their instruments. When I read in the 'Record' that the possessor of a 'two-valve set' has logged 2BL, 2FC, and a few other stations he is 'not quite sure of,' I wonder if it ever strikes him that he has done so at the expense of perhaps hundreds of fellow-listeners, 'for miles around,' who have been forced to shut their sets down on account of his gymnastics at the dial."—"Listen and Let Listen" (Wellington).

"It is only those who suffer from an 'oscillating oswald' know the 'tweaks' and 'groans' that can be radiated from a receiving set. Every Sunday afternoon from 3 till 4.30, and almost every evening from 6 till 7.30, this blighter lets his 'tweaks' and 'squeals' forth. I am sure a tribe of Chinamen couldn't make such a din. In fact, several times I have closed down for fear he would burn out my loudspeaker. I am quite satisfied he has no more idea of tuning a wireless set than of a wheelbarrow. I hope the offender reads this, because he will take warning. I would like to give his set a dose of cough mixture! Please remember: Do not regenerate to others as you would have them regenerate to you."—Neutrodyne (Gisborne).

### The Howling Valve Nuisance.

MR. A. P. MORRISON, of Brooklyn, writes: "Most of the comment one reads nowadays points to the small set owner. We all know that some of them howl, but what of the multi-valve set, of course that is not supposed to make a nuisance of itself, but I might state there are a few around Wellington that once they start DX-hunting and break loose with their gurgling noises, one could pack all the little fellows together, but my money would be on the big fellows. Of course, on Wednesday nights, one gets a little 'ruffled' on hearing some one-valvers trying to reach out for Rhodesia, Zanzibar or Waitakaruru, etc., etc. I cannot understand why they cannot be contented to listen to a few Yanks or even Japan, because even a two-valver will sometimes outdo a multi-valve set in bringing in a few Americans, but most multi-valve set owners do their DX hunting with the loudspeaker, connected up.

Of course, she starts to make a noise like our old favourite the Harbour Board 10 o'clock chimes, and then they do not know if it is China or Lower Hutt that is coming in. My advice is, "Use the headphones to tune in the Americans, and then, if sufficient volume, connect up the loudspeaker."

Thomas A. Edison was asked, "Will it ever be possible to completely eliminate static?", and the reply, "It is improbable." I do not profess to be an Edison, but the same thing applies to the howling valve nuisance.

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